

In the Matter of:

San Jacinto River Authority

Permit No. TX0054186

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RESPONSE TO PETITION FOR REVIEW

Pursuant to 40 C.F.R. § 124.19 and the Board's Order of October 15, 2009, the U.S. Environmental Protection Agency Region 6 (Region or EPA) respectfully submits this response to the Petition for Review filed by the San Jacinto River Authority (SJRA or Petitioner) on July 29, 2009, in the above captioned matter. The petition in this case primarily challenges EPA Region 6's inclusion of an effluent limit for "whole effluent toxicity" (WET or toxicity) in the Petitioner's National Pollutant Discharge Elimination System (NPDES) permit. The limit is for toxicity based on sub-lethal effects measured using a freshwater invertebrate, a water flea, called the *Ceriodaphnia dubia*.

The Region developed the limit in order to meet Texas water quality standards applicable to toxicity, based on several years of data generated by SJRA demonstrating sub-lethal toxicity using that test organism. Petitioner's challenge misinterprets applicable State water quality standards, raises issues and test methodology challenges that cannot be raised in this proceeding and/or proffers technical arguments that were not raised with specificity during the comment period. As described in greater detail below, SJRA's request for review on this issue, and others, should be denied.

STATEMENT OF THE CASE

I. STATUTORY AND REGULATORY BACKGROUND

A. The Clean Water Act and NPDES Permits

Congress enacted the Clean Water Act (CWA or Act) “to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.” CWA § 101(a), 33 U.S.C. § 1251(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as in compliance with the Act. CWA §§ 301, 402, 33 U.S.C. §§ 1311, 1342. Under CWA section 402, EPA may “issue a permit for the discharge of any pollutant, or combination of pollutants” so long as the requirements of the CWA and its implementing regulations are met. *Id.* NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. CWA § 402(a)(1)-(2), 33 U.S.C. §§ 1342(a)(1)-(2). The regulations governing EPA's NPDES permit program are generally found in 40 C.F.R. Parts 122, 124, 125 and 136.

NPDES permits are issued by EPA or, in those jurisdictions in which EPA has authorized a state agency to administer the NPDES program, by a state agency subject to EPA review and possible objection, if a permit is outside the guidelines and requirements of the CWA. CWA §§ 402(b)-(d), 33 U.S.C. §§ 1342(b)-(d). EPA authorized Texas to administer the NPDES program for discharges within the jurisdiction of the State water pollution control agency on September 14, 1998. 63 Fed. Reg. 51164 (Sept. 24, 1998); *see also Letter from Greg A. Cooke, Regional Administrator, EPA Region 6 to Governor George Bush, Governor of Texas*, dated September 14, 1998 [AR # 73]. For the

discharges relevant to this Petition, the authorized NPDES permitting authority in Texas is the Texas Commission on Environmental Quality (TCEQ), subject to EPA oversight.

CWA section 301 requires the achievement of effluent limitations based on specified “technology-based” standards, as well as any more stringent limitations necessary to meet water quality standards. CWA §§ 301(b), 33 U.S.C. § 1311(b). Technology-based limitations applicable to publicly owned treatment works (POTWs), like SJRA, must meet performance-based requirements based on secondary treatment. CWA § 301(b)(1)(B), 33 U.S.C. § 1311(b)(1)(B). Limits based on secondary treatment consists of technology-based requirements expressed in terms of five-day biochemical oxygen demand (BOD₅), total suspended solids, and pH. 40 C.F.R. Part 133.

Water quality-based effluent limits, on the other hand, are designed to ensure that state water quality standards (WQS) are met regardless of the technological and economic factors that inform the derivation of technology-based limitations. CWA section 301(b)(1)(C) requires achievement of “any more stringent limitation ... necessary to meet water quality standards...established pursuant to any State law or regulation....” 33 U.S.C. § 1311(b)(1)(C). Thus, NPDES permits must contain effluent limitations necessary to attain and maintain the WQS, without consideration of the cost, availability or effectiveness of treatment technologies. *See U.S. Steel Corp. v. Train*, 556 F.2d 822, 838 (7th Cir. 1977) (finding “states are free to force technology” and “if the states wish to achieve better water quality, they may [do so], even at the cost of economic and social dislocations”); *see In re City of Moscow*, 10 E.A.D. 135, 168 (EAB 2001) (stating that section 301(b)(1)(C) “requires unequivocal compliance with applicable [WQS], and does not make any exceptions for cost or technological feasibility”); *see also*

In re New England Plating Co., 9 E.A.D. 726, 738 (EAB, 2001) (“In the first instance, there is little question that cost considerations play no role in the *setting* of effluent limits.”) (emphasis in original).

B. EPA Review and Approval of State Water Quality Standards

The CWA obliges states to establish water quality standards applicable to waters of the state, and to submit those standards to EPA for review and approval. CWA § 303(a)&(b); 33 U.S.C. § 1313(a)&(b). States are required to review applicable WQS from “time to time ...but at least once each three years” and, as appropriate, modify or adopt new or revised WQS. CWA § 303(c), 33 U.S.C. § 1313(c). States are then required to submit new or revised WQS to EPA for review and approval. *Id.* EPA then must determine whether the new or revised WQS meet the requirements of the CWA and either approve or disapprove such new or revised WQS. CWA § 303(c)(3), 33 U.S.C. § 1313(c)(3); 40 C.F.R. § 131.21. When a state adopts a WQS that goes into effect after May 30, 2000, the WQS does not become applicable for purposes of the CWA until EPA approves that WQS. 40 C.F.R. § 131.21(c). Applicable WQS for purposes of the CWA are the minimum standards that must be met when the CWA and regulations implementing the CWA refer to WQS, such as when developing water quality-based effluent limits (WQBELs) in NPDES permits. 40 C.F.R. § 131.21(d). Thus, if WQS are adopted by a state but are not yet approved by EPA as WQS under CWA section 303(c), such new or revised WQS are not applicable when implementing the CWA through NPDES permits.

WQS consist of three elements, two of which are relevant here: (1) a designated beneficial “use” of the water, such as for public water supply, aesthetics, recreation,

propagation of fish, or agriculture; and (2) “criteria,” which specify the amounts of various pollutants that may be present in those waters without impairing the designated uses, expressed either in numeric form for specific pollutants or in narrative form (e.g., “no toxics in toxic amounts”). CWA § 303(c)(2)(A), 33 U.S.C. § 1313(c)(2)(A); *see* 40 C.F.R. §§ 130.3, 130.10(d)(4), 131.6, 131.10 and 131.11. Federal regulations implementing the CWA expressly recognize the establishment by the states of water quality standards based upon narrative criteria. 40 C.F.R. §§ 131.3(b), 131.11(b)(2).

C. Implementation of Water Quality-Based Requirements in NPDES Permits

As explained above, CWA section 301(b)(1)(C) requires NPDES permits to include effluent limitations as necessary to meet WQS. Federal NPDES regulations provide that a permit must contain effluent limits as necessary to protect state water quality standards, “including State narrative criteria for water quality.” 40 C.F.R. §§ 122.44(d)(1), 122.44(d)(5) (providing in part that a permit incorporate any more stringent limits required by section 301(b)(1)(C) of the CWA); 54 Fed. Reg. 23868, 23875 (June 2, 1989). A permit would be inconsistent with section 301(b)(1)(C) if the permit did not contain effluent limits necessary to attain and maintain both narrative and numeric water quality criteria. The courts have explicitly recognized that water quality criteria can be expressed in narrative form and, in that form, can be used to derive water quality-based effluent limits (WQBELs). *See American Paper Inst. v. EPA*, 996 F.2d 346, 351 (D.C. Cir. 1993) (“Congress’ ...intent, made explicit in section 301 of the CWA, [was] that *all* state water quality standards be enforced through meaningful limitations in NPDES permits”) (emphasis in original); *American Iron & Steel Inst. v. EPA*, 115 F.3d 979, 990

(D.C. Cir. 1997) (discharge permits must incorporate limitations that ensure both numeric and narrative water quality standards are met).

D. Texas Water Quality Standards for Toxicity

Texas WQS have narrative criteria to protect against toxicity, which contemplate the use of WET limits as a tool to implement these criteria. *See* 30 Tex. Admin. Code § 307.4 (General Criteria) (“Surface waters will not be toxic ... to ... aquatic life”); *See also* 30 Tex. Admin. Code § 307.6(b)(2) (Toxic Materials, General provisions) (“Water in the state with designated or existing life uses shall not be chronically toxic to aquatic life”). Texas WQS general policy statement supports this protection. *See* 30 Tex. Admin. Code § 307.1 (“It is the policy of this state and the purpose of this chapter to maintain the quality of water in the state consistent with public health and enjoyment, propagation and protection of terrestrial and aquatic life”). This policy and these requirements protecting Texas waters from toxicity are implemented through WET testing:

§ 307.6. Toxic Materials

* * *

(e) Total Toxicity.

(1) Total (whole effluent) toxicity of permitted discharges, as determined from biomonitoring of effluent samples at appropriate dilutions [*i.e.*, WET testing], will be sufficiently controlled to preclude acute total toxicity *Chronic total toxicity*, as determined from biomonitoring of effluent samples [*i.e.*, WET testing], *will be precluded* in all water in the state with existing or designated aquatic life uses

30 Tex. Admin. Code §§ 307.6(b) and (e) (emphasis added).

The protection from toxicity includes protection from “chronic toxicity,” which is defined as toxicity exemplified by sub-lethal toxic effects, such as impairment of growth or reproduction:

§ 307.3. Definitions and Abbreviations

* * *

(10) Chronic toxicity - Toxicity which continues for a long-term period after exposure to toxic substances. Chronic exposure *produces sub-lethal effects, such as growth impairment and reduced reproductive success*, but it may also produce lethality. The duration of exposure applicable to the most common chronic toxicity test is seven days or more.

30 Tex. Admin. Code § 307.3 (a)(10) (emphasis added). Thus, it is clear that Texas' WQS protect for chronic toxicity, which explicitly includes sub-lethal effects.

If toxicity (either lethal or sub-lethal) is found, the Texas WQS and the permit itself require that the permittee conduct tests, specifically, a toxicity identification evaluation (TIE) and toxicity reduction evaluation (TRE) to attempt to determine what is causing the toxicity. The provisions further require that following such tests, additional conditions, including WET limits may be included in the permit.

(2) General provisions for controlling total toxicity.

* * *

(D) If toxicity biomonitoring results indicate that a discharge is exceeding the restrictions on total toxicity in this section, then the permittee shall conduct a toxicity identification evaluation and toxicity reduction evaluation in accordance with permitting procedures of the commission. As a result of a toxicity reduction evaluation, additional conditions may be established in the permit. *Such conditions may include total toxicity limits [i.e., WET limits] . . .*

30 Tex. Admin. Code § 307.6(e)(2)(D) (emphasis added). Texas WQS also exclude from the definition of "toxicity" "adverse effects caused by concentrations of dissolved salts ... in source waters." 30 Tex. Admin. Code § 307.3(65).

These WQS requirements for toxicity quoted above all apply to SJRA because it discharges to a waterbody that is designated as a "life use" (specifically, "contact recreation, high quality aquatic life and public water supply"). See 30 TAC § 307.10 Appendix A (Site-specific Uses and Criteria for Classified Segments)(segment 1008,

Spring Creek). SJRA has previously conducted a TRE and TIEs that indicate chronic toxicity for sub-lethal effects. *Petition* at pp. 5-6.

E. WET Tests and WET Limits

EPA's WET test methods, in 40 C.F.R. § 136.3(a), Table 1A, are vital to the effective control of toxic pollutants in the Nation's waters under the CWA, because chemical-specific limits alone cannot necessarily fully protect against the toxic effects of a facility's effluent. A facility's effluent may be toxic to aquatic life, even though the causative chemical may not be identified. In other cases, discharges of several chemicals in a single effluent, each meeting the applicable individual WQBELs, still can be toxic because of the synergistic effects of the chemical mixture. *See Technical Support Document for Water Quality-based Toxics Control (TSD), EPA/505/2-09-010* (2nd printing, March 1991), section 1.6 at p. 23 [Ex. # 7, AR # 79]. WET testing can determine the integrated effects of all chemicals in a single effluent sample and detect toxicity caused by pollutant parameters for which there are no water quality standards or test methods. Finally, WET testing is the only *direct* way to measure the toxic effects of the effluent on organisms exposed to it. *Id.*

WET testing involves the comparison of a specific biological outcome in an exposed group of organisms (experimental group) to an unexposed group (control group), to test the hypothesis that the biological outcome is associated with the exposure. Before any conclusions are made from such comparisons, the results are analyzed statistically, to ensure – with reasonable certainty – that any observed difference was not due to chance. *See Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving*

Waters to Freshwater Organisms, EPA-821-R-02-013, at 37 (4th ed. Oct. 2002) section 9.4 at p. 40. [Ex. # 8, AR # 80] (Methods Manual).

In the case of WET testing, small groups of organisms in selected species of aquatic life, *e.g.*, fish, invertebrates, and plants, are exposed to specified concentrations of effluent, in a controlled laboratory setting, to determine the acute or chronic effects of the effluent. These test organisms are typically born and cultured in laboratories for the purpose of toxicity testing. WET test indicator species have been proven to be suitable for WET testing because of their availability, ease of maintenance, and short reproductive cycles. WET test methods are designed to test for certain chronic biological outcomes, *e.g.*, survival, growth, and reproduction. *Methods Manual* at p. 37 [Ex. # 8, AR # 80].

The WET test results are measured, analyzed and may be expressed in terms of one or more statistical endpoints. The Methods Manual describes two: (1) No Observable Effect Concentration (NOEC), the highest concentration of toxicant that causes no observable adverse effect on the organisms; and (2) Inhibition Concentration (IC), the point estimate of the effluent concentration that would cause a specified percentage reduction, *e.g.*, 25 %, in a measurement such as reproduction or growth. For example, if exposing test organisms to a solution composed of equal parts clean dilution water and a facility's effluent causes a 25% reduction in the growth of the organisms, the IC₂₅ for growth is 50% effluent. *Methods Manual* at sections 9.1 and 9.2 at p. 37 [Ex. # 8, AR # 80]

Replication – exposing not just one organism but, for example, *ten* organisms to *each* concentration level of effluent, taking the average of that result, and comparing it to an average based on *ten* unexposed sets of control organisms – is an integral part of WET

test method design. WET test methods using fish or invertebrates typically require the use of 60 to 200 organisms per test. Chemical test methods, in comparison, are based on a single measurement of a sample. The large number of replicates, the use of averaging, and statistical methods account for variability and protect against small changes being interpreted as findings of toxicity. See *Methods Manual*, section 9.4.5 at p. 40 [Ex. # 8, AR # 80]

Figure 1. Waterflea (*Ceriodaphnia dubia*) Chronic Toxicity Test Design

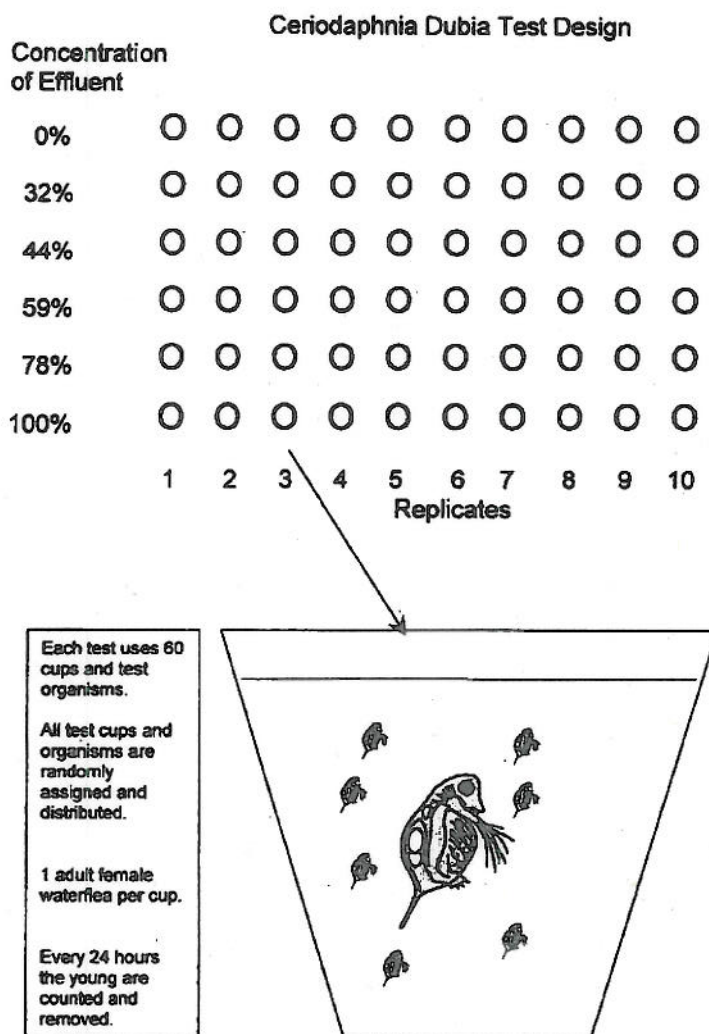


Figure 1 depicts the design of the WET test method used to determine compliance with the WET limit at issue in the Petition, specifically, the *Ceriodaphnia dubia* (*C. dubia*), Survival and Reproduction Test. *Fact Sheet* at p. 23. This test is designed to determine the effect of effluent on the ability of *C. dubia*, a common water flea, to survive and reproduce. Each circle in Figure 1 represents a cup. At the beginning of the test, each cup contains one juvenile female *C. dubia* less than 24 hours old. The top row represents the control group, which is exposed only to the dilution water used in the test; the control group is therefore exposed to no effluent.¹ The experimental groups of test organisms are exposed to the specified concentrations of effluent (in this example 32, 44, 59, 78 and 100%). At the end of the test (typically seven days) the total offspring produced by each adult in each cup are summed. Figure 2, below, provides an example of hypothetical test data collected after the seven-day test period. The results are reported as an average of the number of fleas in each cup, at each effluent level (last column). Each treatment, *i.e.*, effluent dilution, is compared statistically to the control treatment, *i.e.*, the organisms not exposed to the effluent but otherwise subject to all of the other influences as the test organisms. Comparison of the test organisms to the control organisms further isolates possible reasons for differences in organisms' response or "controls" against sources of variability in response to influences other than the effluent to which the test organisms are exposed.

¹ If the dilution water itself contributed to a toxic response in exposed organisms, the response should be most pronounced in the control organisms, though all of the organisms in the 100% effluent group would be exposed to any toxicity from the dilution water.

Figure 2. Example reproduction results for *Ceriodaphnia dubia* toxicity test

Concentration of Effluent	<i>Ceriodaphnia dubia</i> Reproduction										Avg. No. Young
	1	2	3	4	5	6	7	8	9	10	
Control (0%)	31	33	29	28	32	31	35	29	30	32	31.0
32%	20	17	23	18	19	21	14	22	21	19	19.4
44%	23	15	16	16	19	15	19	10	13	12	15.8
59%	14	8	11	5	8	17	10	8	7	7	9.5
78%	8	7	7	1	2	9	9	5	4	9	6.0
100%	5	8	2	2	6	3	11	4	2	7	5.0
Replicate No.	1	2	3	4	5	6	7	8	9	10	

In the Figure 2 example, even though the average number of *C. dubia* in each cup declines after being exposed to even the lowest concentration of effluent (32%) and declines progressively as the samples are exposed to increasing concentrations of effluent, the test methodology requires that the results at each concentration be compared to the control using statistical tools before the analyst can make any conclusions about toxicity.

Evaluation of test results relies on statistical procedures to evaluate the significance between organisms' responses. The Methods Manual identifies two statistical endpoints, NOEC and IC₂₅, and associated procedures to determine those values and evaluate the significance of responses. If the laboratory observes a difference between the organisms exposed to a particular concentration of effluent and the control group, and the difference is so significant that it can be concluded, with reasonable certainty, that the difference is not due to chance, and assuming the test otherwise meets acceptability criteria specified in the test procedures, then the results indicate a valid "failure," and that concentration of effluent is "toxic." In the example above, in all

concentrations of the effluent tested, the reduction in the average number of *C. dubia*, compared to the control was so significant that it can be concluded, with reasonable certainty, that it was not a chance occurrence. Thus, there are toxic effects at all effluent concentrations tested. Accordingly, the "no observed effect concentration," NOEC, for this hypothetical effluent would be <32%.

II. FACTUAL BACKGROUND

A. SJRA Treatment Plant and Procedural History

SJRA owns and operates a publicly owned treatment works (POTW), which is an advanced wastewater treatment facility with a design flow of 7.8 million gallons per day to a tributary of the San Jacinto River Basin in Montgomery County, Texas. Prior to authorization of the Texas NPDES permitting program in 1998, Region 6 was the NPDES permitting agency. At the times relevant to this proceeding, the Texas Commission on Environmental Quality was the permitting agency, subject to EPA oversight.

At the Region's request, on December 2, 2005, TCEQ submitted a revised Texas Pollutant Discharge Elimination System (TPDES) permit for EPA review. *See Letter from Miguel I. Flores, Director, Water Quality Protection Division, EPA Region 6 to Dan Eden, Deputy Director, Texas Commission on Environmental Quality*, dated January 6, 2006 [Ex. # 1, AR # 1]. On January 6, 2006, EPA timely provided its specific objection to issuance of the permit, pursuant to 40 C.F.R. 123.44 and section C.3.b of the Memorandum of Agreement between EPA and TCEQ based on a lack of WET limits required by federal law. *Id.* SJRA was copied on this letter. Specifically, EPA objected that the permit failed to include: (1) appropriate requirements to address sub-lethal

toxicity, (2) a toxicity reduction evaluation (TRE) to identify the causative toxicant(s) and control(s) related to sub-lethal effects, and (3) adequate measures to monitor for persistent sub-lethal test failures. *Id.*

TCEQ issued its permit on January 17, 2006, without including the revisions specified in the Region's objection letter and without notifying EPA that it had done so. *SJRA TPDES permit # 11401-001*, TCEQ Docket No. 2003-1213-MWD, January 17, 2006 [Ex. # 4, AR # 35]. Neither TCEQ nor SJRA took any action in response to the Region's letter of objection.² When EPA learned that TCEQ had issued the permit without revisions or notification, EPA transmitted a letter on March 9, 2006, stating that the permit as issued did not meet the minimum requirements to protect the Texas water quality standards and as such was not a Clean Water Act NPDES permit. *Letter from Miguel I. Flores, Director, Water Quality Protection Division, EPA Region 6 to Dan Eden, Deputy Director, Texas Commission on Environmental Quality*, dated March 9, 2006 [Ex. #2, AR # 2]. The Region also reminded TCEQ that Region 6 would assume exclusive authority to issue the permit if the State agency did not revise the permit to satisfy EPA's objections in its specific objection letter by the end of the 90-day period allowed to make revisions. *Id.*; *see also* CWA § 422(d)(2); 40 C.F.R. §§ 122.4(c) and 123.29. The Texas permit issued to SJRA in 1989 was administratively continued. *See* 40 C.F.R. § 122.6.

On April 13, 2006, EPA transmitted a letter informing TCEQ and SJRA that EPA had exclusive authority to issue the permit and requiring SJRA to submit a permit application and WET test data under its Order for Information authority. *Letter from*

² Under EPA regulations, "any interested person," e.g., including a permittee, may request a hearing on an EPA objection. 40 C.F.R. § 123.44(e). Neither TCEQ nor SJRA requested such a hearing.

Claudia V. Hosch, Chief, NPDES Permit Branch, EPA Region 6 to Donald R. Sarich, Division Manager, San Jacinto River Authority, dated April 13, 2006 [Ex. # 3, AR # 5]; CWA § 308, 33 U.S.C. § 1318.

EPA received the requested information on June 2, 2006, and analyzed the information submitted according to federal regulations. *Fact Sheet* at p. 4 [Ex. # 6, AR # 60]. The Region proposed a draft permit and, after taking comment, issued a final permit on September 28, 2007. [AR # 96]. SJRA petitioned the Board for review of the permit, but upon review of the SJRA petition and an intervening notification by TCEQ of a different in-stream flow estimation, the Region withdrew the contested conditions and notified the Board, which dismissed the Petition as moot. Order Dismissing Petition for Review (March 28, 2008), NPDES Appeal No. 07-19 [AR # 70]. After re-consideration, the Region proposed to modify the permit on January 29, 2009. *Proposed Modified Permit* at p. 1 [AR # 59]. Prior to proposal and by letter dated November 4, 2008, SJRA submitted a document described as a sub-lethal toxicity evaluation (2008 STE) of the effluent's sub-lethal toxicity. *Letter from Donald R. Sarich, Division Manager, San Jacinto River Authority, to Phillip Jennings, Effluent Toxicity Coordinator, Region 6* [Ex. # 14, AR # 122]. During the public comment period on the Proposed Modified Permit, SJRA submitted comments on March 2, 2009. *Comments* [Ex. # 12, AR # 127]. After consideration of comments received, the Region issued the Modified Permit on July 29, 2009. *Modified Permit* at p. 1 [Ex. # 5, AR # 54].

B. The Modified Permit

The Region had found that the effluent discharged from SJRA Woodlands Plant No.1 Outfall 001 causes an in-stream excursion above the Texas WQS established to

protect aquatic life from toxicity pursuant to 40 C.F.R. § 122.44(d) (water quality based effluent limits required if a discharge causes, has the reasonable potential to cause, or contributes to non-attainment of water quality standards); *Fact Sheet* at p. 4 [Ex. # 6, AR # 60]. The Region found that not only did the discharge exhibit the reasonable potential to cause non-attainment of Texas water quality standards for toxicity, but that numerous sub-lethal test failures over a number of years indicated that there actually have been excursions above the established WQS. *Fact Sheet* Appendix G (documenting dates when WET tests failed, *i.e.*, with “no observed effect concentration” (NOEC) value of less than 78%) [Ex. # 6, AR # 60].

As part of the permit conditions, the Region included WET limits based on chronic toxicity tests using the common water flea that SJRA is challenging in this Petition. *Permit* at part II.D [Ex. # 5, AR # 54]. EPA also allowed SJRA a three-year schedule of compliance for the WET limits. During that three year period, SJRA could perform any additional studies, construction or investigations of its pollutant contributors that it may deem appropriate. *Id.* at Part I.B. In addition, the permit includes a reopener to require chemical-specific effluent limits, additional testing, and/or other appropriate actions to address toxicity should SJRA identify and confirm the toxicant responsible for its toxicity prior to the completion of the compliance schedule. *Id.* at Part II.E(1)(d).

In addition to the WET limit for *C. dubia* measuring sub-lethal toxicity (*i.e.*, impaired growth and reproduction) with a delayed effective date, the permit also includes toxicity testing requirements using *C. dubia* and the fathead minnow that are effective upon issuance of the permit. *Permit*, I.A.1 & n8 & n9, p.2 [Ex. # 5, AR # 54]. Though the Region found that, based on the existing data set measuring toxicity with the fathead

minnow, the SJRA discharge likely had the reasonable potential to cause non-attainment of the water quality standard for toxicity, *Fact Sheet*, Appendix G, p.2 [Ex. 6, AR # 60], the data set was much smaller than the data set developed using the *C. dubia* test. The fathead minnow data set included 21 data points generated between June of 2003 and June of 2008, only two of which indicated toxicity, once in 2003 and again in 2004. *Id.* Rather than impose a permit limit based on toxicity that may have since been resolved, the Region decided to include a condition requiring quarterly testing initially, with the potential to reduce to bi-annually depending on initial test results, as well as a requirement to initiate an evaluation of measures to reduce toxicity if persistent toxicity was found. *Permit*, II.D.5 [Ex. # 5, AR # 54].

STANDARD OF REVIEW

SJRA filed this Petition for Review pursuant to 40 C.F.R. § 124.19(a), which affords persons aggrieved by a Region's NPDES permit decision the opportunity to appeal to the EAB. Although the Board has broad authority to review decisions made in NPDES permit cases, EPA intended the Board's power of review to be exercised "only sparingly." *See* 44 Fed. Reg. 32853, 32887 (June 7, 1979).

In proceedings brought under 40 C.F.R. § 124.19(a), the Board generally will not grant review unless the petitioner establishes that a permit condition is based on a clearly erroneous finding of fact or conclusion of law, or involves an exercise of discretion or an important policy consideration that the Board determines warrants review. 40 C.F.R. § 124.19(a)(1)-(2); *In re Carlota Copper Co.*, 11 E.A.D. 692, 708 (EAB 2004). The burden of demonstrating that review is warranted rests with the petitioner. 40 C.F.R. § 124.19(a); *see Rohm & Haas*, 9 E.A.D. 499, 504 (EAB 2000). A petitioner must argue

with specificity why the Board should grant review. *In re Puerto Rico Electric Power Authority*, 6 E.A.D. 253, 255 (EAB 1995). To meet the threshold of specificity required under 40 C.F.R. § 124.19(a), a petitioner must take two necessary steps: (1) state the objections to the permit that are being raised for review, and (2) explain why the Region's previous response to those objections is clearly erroneous or otherwise warrants review. *See Michigan Dep't of Env'tl. Quality v. EPA*, 318 F.3d 705, 708-09 (6th Cir. 2003) (citing *In re Puerto Rico Elec. Power Auth.*, 6 E.A.D. at 255). Thus, the mere repetition of objections made during the comment period or the "mere allegation of error" without specific supporting information are insufficient to warrant review. *In re Phelps Dodge Corp.*, 10 E.A.D. 460, 496, 520 (EAB 2002); *In re Knauf Fiber Glass, GmbH*, 9 E.A.D. 1, 5 (EAB 2000).

Additionally, clear error or reviewable exercise of discretion is not established simply because petitioner presents a difference of opinion or alternative theory regarding a technical matter. *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 667 (EAB 2001). Instead, when a petitioner challenges the Region's technical judgment, "[p]etitioners must provide compelling arguments as to why the Region's technical judgments or its previous explanations of those judgments are clearly erroneous or worthy of discretionary review." *Id.* at 668 (citing *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 404 (EAB 1997)).

Moreover, where the science in an area is uncertain, a contrary opinion urged by a petitioner will neither establish that a rational, adequately explained judgment by the Region is clearly in error nor overcome the Board's traditional deference to Regional technical determinations. *In re Dominion Energy Brayton Point, L.L.C.*, 12 E.A.D. 490,

511 (EAB 2006). This particularly heavy burden advances the policy imperative of “ensur[ing] that the locus of responsibility for important technical decision making rests primarily with the permitting authority, which has the relevant specialized expertise and experience.” See *In re Peabody W. Coal Co.*, 12 E.A.D. 22, 34 (EAB 2005), citing *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567-68 (EAB 1998), rev. denied sub nom. *Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999). (“[W]here a permit decision pivots on the resolution of a genuine technical dispute or disagreement, the Board prefers not to substitute its judgment for the judgment of the decisionmaker specifically tasked with making such determinations in the first instance.”) In such cases, deference to the Region’s decision is generally appropriate if “the record demonstrates that the Region duly considered the issues raised in the comments and if the approach ultimately selected by the Region is rational in light of all of the information in the record.” *NE Hub Partners* at 567-68. If conflicting views of the Region and a petitioner indicate “bona fide differences of expert opinion or judgment on a technical issue, the Board typically will defer to the Region.” *Id.* at 567-68.

Finally, a party petitioning the Board for review must raise “all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period (including any public hearing) under section 124.10.” See 40 C.F.R. § 124.13. Moreover, “the petitioner must have raised during the public comment period the specific argument that the petitioner seeks to raise on appeal; it is not sufficient for the petitioner to have raised a more general or related argument during the public comment period.” See *In re Government of the District of*

Columbia Municipal Separate Storm Sewer System, 10 E.A.D 323, 339 (EAB 2002) (construing *In re RockGen Energy Ctr.*, 8 E.A.D. 536, 547-48 (EAB 1999)).

ARGUMENT

The Region properly determined the need for and form of permit limitations and conditions based on applicable Texas water quality standards for toxicity.

I. The Region Properly Included a WET Limit in SJRA's Permit Based on WET Test Data That Demonstrated In-Stream Excursions of the State Water Quality Criteria for Toxicity

As discussed above, Texas water quality criteria require protection against toxic effects, specifically including effects on the growth and reproduction of aquatic life, known as "sub-lethal" toxicity. WET test data submitted by SJRA as required by its NPDES permit has demonstrated significant sub-lethal toxic effects on numerous occasions and over many years. *Fact Sheet* at p. 25 [Ex. # 6, AR# 60]. Based on this data, the Region determined that SJRA's effluent has the reasonable potential to exceed Texas water quality criteria requiring protection against toxicity, and accordingly established WET limits in the permit.

The Petitioners do not challenge the validity of the WET test results – rather, the petitioners argue that despite the sub-lethal WET test failures, the permit should not contain WET limits because a state guidance document, *Procedures to Implement the Texas Surface Water Quality Standards* ("Implementation Procedures"), does not specify WET limits based on sub-lethal WET testing results. The controlling legal requirement, however, is not the guidance document, but rather the federal permitting regulation and the State water quality standards approved under CWA section 303(c). See 122.44(d)(1)(i) (requiring limits for all pollutants that "will cause, have the reasonable

potential to cause, or contribute to an excursion above any State water quality standard...”)(emphasis added). As explained below, the State guidance document was never established under State law, submitted to the Region, nor approved as a revision to State water quality standards. Regardless of what the guidance document may recommend regarding State implementation of WET limits in State permits, the federal permit must include limits necessary to meet State water quality standards.

As explained above, the State water quality criteria require protection against sub-lethal toxicity. Although the water quality standards allow for a limited exception where the adverse effects are caused primarily by dissolved salts in the source water, SJRA did not provide sufficient data and information to show that its effluent qualified for this exception. Therefore, based on its finding that the SJRA discharges caused non-attainment of Texas water quality criteria for sub-lethal toxicity, the Region properly included WET limits in the Modified Permit.

A. WET Test Data Demonstrated That SJRA’s Effluent Has a Reasonable Potential to Cause Non-Attainment of Texas Water Quality Criteria for Toxicity

Based on WET test data submitted by SJRA, the Region determined that SJRA’s effluent has the reasonable potential to cause – and has in fact caused – in-stream excursions above Texas’ water quality criteria for toxicity. SJRA developed the data supporting this determination under earlier NPDES permits (issued both by the Region and the State) that had required SJRA to conduct seven-day freshwater WET tests using EPA-promulgated WET test methods to determine whether there were longer-term (chronic) effects on survival (lethal effect) or growth and reproduction (sub-lethal

effects).³ SJRA's effluent demonstrated significant chronic sub-lethal effects in 14 of 56 tests performed over the past five years, with, in some cases, statistically significant sub-lethal toxicity demonstrated at all effluent concentrations tested (from 86% effluent down to less than 23% effluent).⁴ *Fact Sheet* at p. 25 [Ex. # 6, AR # 60].

The Texas water quality criteria provide protection against chronic total toxicity, which is defined in the criteria to include both lethal and sub-lethal effects. Specifically, the criteria provide that "[c]hronic total toxicity, as determined from biomonitoring of effluent samples, will be precluded in all waters in the state with existing or designated aquatic life uses..." 30 Tex. Admin. Code § 307.6(e)(1)(2000). *See also* 30 Tex. Admin. Code § 307.6(b)(2) ("Water in the state with designated or existing aquatic life uses shall not be chronically toxic to aquatic life..."). The criteria specifically define chronic toxicity as including "sub-lethal effects, such as growth impairment and reduced reproductive success." 30 Tex. Admin. Code § 307.3(a)(10).

The Region evaluated whether the discharge has the "reasonable potential" to cause an in-stream excursion above Texas' narrative water quality standards, as required by 40 C.F.R. 122.44(d)(1)(i)(ii) and (v), in order to determine the need for an effluent limit to meet the standards. *Fact Sheet* at pp. 25-26 [Ex. # 6, AR# 60]. In assessing the need for a limit, the Region considered the available WET test data, as well as the effluent critical dilution – essentially, a numeric expression of the "worst case scenario" in-stream flow that serves to translate the narrative water quality criteria for the

³ Tests for chronic toxicity can also measure lethality. If test organisms die, not only will the tests indicate reductions in growth and reproduction, but tests also measure survival, i.e., the effluent's lethality.

⁴ The lower the toxic effluent concentration, the more toxic the effluent. For example, toxicity at effluent concentrations of 23%, 36%, 59%, 71% and 85% would indicate a more toxic effluent than one where an effect was demonstrated only at the 85% effluent concentration and not at the other, lower effluent concentrations tested.